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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,349	10/28/2003	Wolfgang Lubcke	9090-0158	2564
23364	7590	05/27/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			KRAMSKAYA, MARINA	
			ART UNIT	PAPER NUMBER
			2858	

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,349

Applicant(s)

LUBCKE ET AL.

Examiner

Marina Kramskaya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 19-39 is/are pending in the application.
- 4a) Of the above claim(s) 19-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 19-39 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 19-39 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The inventions are distinct, each from the other because of the following reasons:

- I. Claims 1-12, drawn to "a measurement arrangement and measurement device", classified in class 324, subclass 609.
- II. Claims 19-39, drawn to "a measurement arrangement, a measurement instrument and, a method of operating the measuring instrument, employing controllable current sources" classified in class 324, subclass 609.

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the first and second controllable current sources, or controlling the current as in the method, a first and second electronics, an intelligent core, are not required. The subcombination has separate utility such as a system for controlling the level of current for a measuring instrument.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 19-39 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the European Patent Office on 10/07/1999. It is noted, however, that applicant has not filed a certified copy of the 99 11 9840.9 application as required by 35 U.S.C. 119(b).

Claim Objections

Claims 1-11 are objected to because of the following informalities: minor grammatical errors, wherein commas are missing. In claim 1, line 6, a comma is needed in "measured values₁ and said supply". In claims 2-9, commas are needed in the first lines in "The measurement arrangement as claimed in claim #₁ wherein".

Appropriate correction is required.

3. Claim 6 is objected to because of the following informalities: the limitation "current/voltage limiter" is unclear. It is unclear if the slash (/) represents "and" or "or";

therefore, for the purposes of the examination, the examiner will consider the limitation to be "current or voltage limiter".

Appropriate correction is required.

4. Claim 10 is objected to because of the following informalities: Claim 10 is not in a proper independent claim format of a PREAMBLE, followed by a TRANSITIONAL PHRASE, followed by the BODY of the claim.

The following changes are suggested:

"An electrically powered measuring device, ~~wherein~~ comprising two ports are ~~provided that constituting~~ constitute a two-wire interface..."

Claim 10 is objected to because of the following informalities: minor grammatical errors, wherein commas are missing. The following changes are suggested:

An electrically powered measuring device, comprising two ports that constitute a two-wire interface for connecting a dual-conductor cable, by way of which electric power is fed to the measuring device, and a measuring signal from the measuring device is transmitted, wherein at least one additional port is provided for connecting a second cable, and wherein the said second cable allows the feeding of additional electric power to the measuring device.

Claim 10 is objected to because of the following informalities: "a measuring signal from the measuring device is transmitted" appearing in line 4 of claim 10. Based in the specification and the drawings, it is understood by the examiner that the measuring signal is transmitted from the higher order unit to the measuring instrument.

Claims 10-11 are objected to because they recite the limitations "dual-conductor cable" and "port" in lines 2, 3, 5, and 6 of claim 10, and lines 2-4 of claim 11. There is insufficient antecedent basis for this limitation in the claim. Rather, pairs of terminals (58₁-58₁₀) and pairs of lines (1 & 3) are provided in the specification. For the purposes of this examination, the "dual-conductor cable" will be interpreted as a "pair of lines", and "port" will be interpreted as the terminal for the pair lines.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 6, & 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Venditti, US 5,248,933.

As per Claim 1, Venditti discloses a measuring instrument **20** and a higher-order unit **18**, said measuring instrument and said higher-order unit being electrically connected with each other by a first pair of lines (**signal 1, signal 2**), and a second pair of lines (**power +, power -**), (FIG. 10), wherein during operation a signal current flows via said first pair of lines (**signal 1, signal 2**) and a supply current flows via said second

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pair of lines (column 6, lines 15-17, **power +, power -**), said signal current representing an instantaneous measured value (column 6, line 4), and said supply current and at least a portion of the signal current supply said measuring instrument (column 6, lines 17-20).

As per Claim 6, Venditti further discloses the measuring arrangement as applied to Claim 1 above, and further discloses each of said first and said second pairs of lines is connected to a current or voltage limiter (**R₁ & R₂**, column 3, lines 64-65).

As per Claim 10, Venditti discloses an electrically powered measuring device **20**, comprising two ports (**46**, a plurality of terminals in FIG. 1 & 10) that constitute a two-wire interface for connecting a dual-conductor cable (pair of lines: **power+, power-**), by way of which electric power (**power+, power-**) is fed to the measuring device **20**, and a measuring signal (**signal 1, signal 2**) to the measuring device **20** is transmitted, wherein at least one additional port (**46**, a plurality of terminals in FIG. 1 & 10) is provided for connecting a second cable (pair of lines: **power+, power-**), and wherein the said second cable allows the feeding of additional electric power (**power+, power-**) to the measuring device.

As per Claim 11, Venditti discloses an electrically powered measuring device **20**, wherein said at least one additional port comprises two further ports (**46**, a plurality of

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terminals in FIG. 1 & 10) constituting a second two-wire interface for connecting a second dual-conductor cable (pair of lines: **power+**, **power-**).

As per Claim 12, Venditti discloses an electrically powered measuring device **20**, wherein the current emanating from the first two-wire interface and/or current emanating from the second two-wire interface is limited (R_1 & R_2 , limiting resistors, column 3, lines 64-65).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2 & 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venditti, US 5,248,933, in view of Wetzel et al., US 5,742,225.

As per Claim 2, Venditti discloses the measuring arrangement as applied to Claim 1, above.

Venditti does not disclose a variable supply current in accordance with the current power demand of the measuring instrument.

Wetzel discloses a measuring arrangement where the supply current is varied (column 2, lines 54-59).

Therefore, it would have been obvious to a person of ordinary skill in the art to include a variable supply current, as taught by Wetzel, in order to accommodate the need of the load (see FIG. 2).

As per Claims 8 & 9, Venditti discloses the measuring arrangement as applied to Claim 1, above.

Venditti does not disclose a sensor for detecting at least one physical variable, or a bus line for sending the said physical variable.

Wetzel discloses a sensor **10** for detection of at least one physical variable (column 2, lines 39-40 & 62-64), and a bus line 3 for sending the said physical variable.

Therefore, it would have been obvious to a person of ordinary skill in the art to include a sensor detection of at least one physical variable and a line for sending the said physical variable, as taught by Wetzel, in order to monitor the higher order unit.

9. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venditti, US 5,248,933, in view of Schmidt et al., US 5,940,774.

As per Claim 3, Venditti discloses a measuring arrangement as applied to Claim 1, above. Venditti further discloses one transmitter feed unit **24**, operable to supply power to a measurement instrument.

Venditti does not disclose a higher order unit comprising at least two transmitter feed units, each of said transmitter feed units being operable to supply a conventional two-wire measuring instrument with electrical power.

Schmidt discloses a measuring arrangement, wherein the higher order unit (cell controller) comprises at least two transmitter feed units (Tx/Rx Processing: Transmit/Receive Signal Processing), each of said transmitter feed units being operable to supply a conventional two-wire measuring instrument (TRU: Transmit Receive Unit) with electrical power (CPS: Channel Power Setting).

Therefore, it would have been obvious to a person of ordinary skill in the art to include at least two transmitter feed units that are operable to supply a two-wire measuring instrument with electrical power, as taught by Schmidt, in the measurement arrangement of Venditti, in order to supply power and transmit signals to the measuring unit.

As per Claims 4 & 5, Venditti in view of Schmidt disclose a measuring arrangement as applied to Claim 3, above.

Venditti in view of Schmidt do not explicitly disclose a connection between the first and second pairs of lines with the two transmitter feed units.

However, it would be obvious to a person of ordinary skill in the art to connect the first and second pairs of lines with the two transmitter feed units, since each of the transmitter feed units, as disclosed by Schmidt, is operable to be connected to a pair of lines.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Venditti, US 5,248,933, in view of Belforte et al., US 6,194,909.

Venditti discloses the measuring arrangement as applied to Claim 1, above.

Venditti does not disclose the first and second pairs of lines that are galvanic isolated from each other.

Belforte discloses a measuring arrangement where the first and second pairs of lines are galvanic isolated (by device **17**) from each other (column 2, lines 29-31).

Therefore, it would have been obvious to a person of ordinary skill in the art to use galvanic isolation, as taught by Belforte, in the measuring arrangement of Venditti, in order to isolate the measuring instrument from the higher order unit (i.e. the device under test).

Response to Arguments

11. Applicant's arguments filed 2/28/2005 have been fully considered but they are not persuasive.

12. In response to applicant's argument that Venditti does not disclose powering any device via two pair of lines, the examiner draws attention to FIG. 10, wherein two supply lines (**power +**, **power -**) are connected between the measuring device **20** and the higher order unit **18**. The examiner, in the original office action, has given the term "higher order unit" the broadest reasonable interpretation, and in the instant case has equated the calibrator **18** with the higher order unit, not equated **18** with a measuring

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device, as the applicant asserts. Further, the measuring device **20** is connected to the higher order unit **18**, via a plurality of lines, all designated by the reference numeral **216**, see column 6, lines 15-17, and a plurality of ports for the lines are shown in FIG. 1.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Venditti does not disclose or suggest the use of one of the two supply currents, each flowing in one of two pairs of lines, to represent any measured value) are not recited in the rejected claim(s). In the instant case, the claim limitation sets forth the requirement for the "signal current" to represent a "measured value". Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

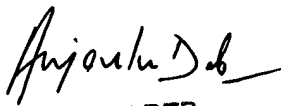
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schwindt, US 5,729,150, discloses a multi-line measuring device. Zyl, US 5,416,723, discloses a measuring device with two terminals for the supply and signal currents, as well a device functioning in intrinsically safe mode and out. Bramwell, US 5,721,688, discloses a measuring device for measuring at least one physical variable and converting it to an electrical characteristic.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571)272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ANJAN DEB
PRIMARY EXAMINER

MK

Marina Kramskaya
Examiner
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